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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,672	03/26/2001	Bryan W. Shirk	TRW (VSSIM) 4686-1	9811
26294	7590	08/16/2004	EXAMINER	
TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P. 526 SUPERIOR AVENUE, SUITE 1111 CLEVEVLAND, OH 44114			LUM VANNUCCI, LEE SIN YEE	
			ART UNIT	PAPER NUMBER

3611

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/817,672

Applicant(s)

SHIRK ET AL.

Examiner

Ms. Lee S. Lum

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-17,19-32,34-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) all is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A RCE and Amendment were filed 5/24/04, the latter also canceling Claims 2, 18, 33.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 10-12, 28-31, and 43-46** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 10, 28 and 43, "the...resin is in the form of...fibers" is unclear because a resin is NOT a fiber. It is suggested that the language be amended to "...*is formed as*...fibers", or similar.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. **Claims 1, 10-13 and 32** (10-12 as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk et al 5939467 in view of Buchanan et al 6342304.

Re **Claims 1 and 13**, Wnuk discloses a product comprising a biodegradable material (obviously having a cellular structure),

consisting essentially of a PHA resin (c24, In 3-5, and c26, third complete paragraph; where "essentially" is within the range of "70 to about 80 weight % PHA"; In 3-5),

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the PHA resin being a copolymer including PHB (3-hydroxybutyrate) or PHBV (3-polyhydroxyvalerate) (c22, ln 40-44, and c23, ln 29-33).

The reference does not disclose a product as a vehicle component, while Buchanan shows this application in c15, ln 21. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this endproduct, as shown in Buchanan, thus aiding the environment when the product is finally discarded.

As best understood, re Claim 10, Wnuk discloses the PHA resin as "formed into fibers" in c33, ln 27-30.

Re Claim 11, Wnuk discloses the PHA fibers as bonded together to form a fabric in c33, ln 33-37.

Re Claim 12, Wnuk discloses the PHA resin as comprising polyhydroxyoctanoate in c13, ln 44-47.

Re Claim 32, Wnuk does not disclose a biodegradable airbag canister comprising PHA resin, while Buchanan exemplifies this product in c17, ln 46; "solid plastic articles". It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this product, as exemplified in Buchanan, to render it biodegradable, thus aiding the environment when the canister is discarded.

**B. Claims 3, 7, 8, 34, 35, 39 and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Buchanan, and in further view of Noda 6174990.

Re Claims 3, 7, 34, 35 and 39, the previous references do not disclose a composition including PHA resin and a biodegradable fiber, while Noda shows this fiber in c21, ln 50-52; "wood pulp". It would have been obvious to one with ordinary skill in the art at the time the invention was made to include these arrangements, as shown in Noda, to provide increased biodegradability to the material, thus aiding the environment when it is finally discarded.

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Re Claims 8 and 40, Wnuk discloses the PHA as a copolymer including PHB in c13, In 41-43.

C. **Claims 9 and 14-16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Buchanan, and in further view of Soane et al 6607994.

The previous references do not disclose the biodegradable fiber as cotton, while Soane shows this fiber in c10, In 26-27 and 39-43. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this type of fiber, as shown in Soane, to increase biodegradability, thus aid the environment when the material is finally discarded. This fiber also includes sound-deadening characteristics, thus increasing comfort for the passengers.

D. **Claims 4-6, 36-38, 39 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Buchanan and Noda, and in further view of Soane.

Re Claims 4-6 and 36-38, the previous references do not disclose certain aspects of the biodegradable fibers, while Soane shows, in c10, first complete paragraph,

These fibers as continuous, and woven together (c10, In 20, 16 and 30),

Or discontinuous, and bonded to form a web/nonwoven material (c10, In 20, 31 and 34-38).

The recited characteristics (dis/continuous) are well-known forms of the fibers, and the various means of manipulating them are very well-known. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to include these fiber characteristics, as shown in Soane, in a particular means of manipulation towards the desired endproduct. Thus, the endproduct is made in a cost-efficient manner.

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Re Claims 39 and 41, the previous references do not disclose the biodegradable fiber as natural/synthetic, while Soane shows these characteristics in c10, ln 23-26 and 39. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this type of fiber, as shown in Soane, to increase biodegradability, thus aiding the environment when the material is finally discarded.

E. **Claims 17, 27-31 and 42-46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Veiga et al 6455449.

Re Claims 17, 27 and 42, Wnuk does not disclose a biodegradable airbag, while Veiga shows this element in c5, ln 17-20. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this endproduct, as shown in Veiga, to aid the environment when the airbag is finally discarded.

As best understood, re Claims 28 and 43, Wnuk discloses the PHA resin as "formed into fibers" in c33, ln 27-30.

Re Claims 29 and 44, Wnuk discloses the PHA fibers as bonded together to form a fabric in c33, ln 33-39.

As best understood, re Claims 30 and 45, Wnuk discloses the PHA resin as including 3-hydroxybuturate-co-3-hydroxyvalerate in c13, ln 45-46.

Re Claims 31 and 46, the previous references do not disclose specific ranges of (Mullen) burst strength and elastic modulus, but these characteristics are inherent in the product comprising the constituent elements as provided above. That is, given the particular components of the airbag as provided above, a minimum burst strength of 1500 psi, and an elastic modulus range of 10000-40000 psi, would be present in the product.

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F. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Veiga, and in further view of Buchanan.

The previous references do not disclose a biodegradable airbag canister, while Buchanan exemplifies this item in c17, ln 46; "solid plastic articles". It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this endproduct, as exemplified in Buchanan, thus aiding the environment when the canister is finally discarded.

G. **Claims 20, 24 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Veiga, Buchanan, and in further view of Noda.

Re Claims 20 and 24, the previous references do not disclose the canister as including PHA resin reinforced with a biodegradable fiber, while Noda shows this material in this fiber in c21, ln 50-52. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this material, as shown in Noda, to provide increased biodegradability to the material, thus aiding the environment when the canister is finally discarded.

As best understood, re Claim 25, Wnuk discloses the PHA as a copolymer of PHB in c13, ln 41-43.

H. **Claims 21-23 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wnuk in view of Veiga, Buchanan, and Noda, and in further view of Soane.

Re Claims 21-23, the previous references do not disclose certain characteristics of the biodegradable fibers, while Soane shows, in c10, first complete paragraph,

These fibers as continuous, and woven together (c10, ln 20, 16 and 30),

Or discontinuous, and bonded to form a web/nonwoven material (c10, ln 20, 31 and 34-38).

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The recited characteristics (dis/continuous) are well-known forms of the fibers, and the various means of manipulating them are very well-known. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to include these fiber characteristics, as shown in Soane, in a particular means of manipulation towards the desired endproduct. Thus, the endproduct is made in a cost-efficient manner.

Re Claim 26, Soane further shows the biodegradable fiber as cotton in c10, ln 39. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this type of fiber, as shown in Soane, to provide increased biodegradability to the material, thus aiding the environment when the canister is finally discarded.

4. The prior art made of record, and not relied upon, is considered pertinent to the disclosure: Ryan et al 6506873, Veiga 6350709, Yagi et al 4894281, Byma et al 6322658, Parrini et al 4324831.

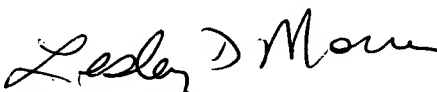
5. RESPONSE TO REMARKS: Moot in light of new rejections.

6. Communication with USPTO/Examiner

Any inquiry concerning this communication, or others, should be directed to Ms. Lum at 703 305-0232, M-F, 9-6. If attempts to reach the examiner are unsuccessful, her supervisor, Ms. Lesley Morris is at 703 308-0629. Our fax number is 703 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications: private PAIR only, for published applications: private or public PAIR. For more information re PAIR: <http://pair-direct.uspto.gov>. Questions re private PAIR: contact the Electronic Business Center (EBC) at 866 217-9197.

Ms. Lee S. Lum  
Examiner  
8/9/04



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